

Topics 5.4 – 5.5

## 5.4 Evolution

| Assessment Statement  | Study information  |
|---|--|
| 5.4.1 Define evolution.   | Define evolution:  |
| 5.4.2 Outline the evidence for evolution provided by the fossil record, selective breeding of domesticated animals and homologous structures. | How does the fossil record support evolution?<br><br>How does selective breeding support evolution?<br><br>How do homologous structures support evolution? |
| 5.4.3 State that populations tend to produce more offspring than the environment can support.   | Why do populations overproduce offspring? (Use a specific example in your answer)  |
| 5.4.4 Explain that the consequence of the potential overproduction of offspring is a struggle for survival.                                   | Why is there a struggle for survival?  |
| 5.4.5 State that the members of a species show variation.   | Give a specific example of variation within a species.   |
| 5.4.6 Explain how sexual reproduction promotes variation in a species.  | How does sexual reproduction increase variation within a species? (Include both meiosis and random fertilization in your answer).                          |

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| 5.4.7 Explain how natural selection leads to evolution.   | Explain natural selection (VOCNAS).  |
| 5.4.8 Explain two examples of evolution in response to environmental change; one must be antibiotic resistance in bacteria. | <p>Explain how antibiotic resistance develops in bacteria and how that resistance increases within a population.</p> <p>Explain another example of evolution in response to an environmental change.</p> |

## 5.5 Classification

| Assessment Statement                               | Study Information              |
|--|--------------------------------|
| 5.5.1 Outline the binomial system of nomenclature. | What is binomial nomenclature? |



5.5.5 Apply and design a key for a group of up to eight organisms.

### **Mystery Tree #2**



(click on each photo to enlarge image)

- **leaves:** Scale-like and appressed to twig; set of four leaves is much longer than it is wide (and is shaped like long-stemmed wine glass); little or no white pattern on underside.
- **Fruit:** Woody cones about 1" long; unopened cones are shaped like a duck's bill; open cones are shaped like a flying goose.
- **Bark:** Flaky when young; platy, furrowed, and reddish-brown when mature.
- **Distribution:** Native to the Cascade Mountains in Oregon and the Sierra Nevada in California.

Use the dichotomous key at this website to identify the tree above.

[http://oregonstate.edu/trees/dichotomous\\_key/index.html](http://oregonstate.edu/trees/dichotomous_key/index.html)

The mystery tree is: \_\_\_\_\_

Create a dichotomous key to classify the following items: pine tree, clam, robin, deer, oak tree, mouse, dandelion, ant.